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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,573	10/15/2003	Edward J. Seppi		7129

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EXAMINER	
YUN, JURIE	
ART UNIT	**PAPER NUMBER**
2882	

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/687,573	SEPPI ET AL.
	Examiner	Art Unit
	Jurie Yun	2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,6-13,21-25,27-34 and 39-53* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6-13,21-25,27-34 and 39-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 October 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed 1/9/06 has been entered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first and second portions of the filters together with the first and second target materials as claimed in independent claims 1, 21, and 39 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3, 6-12, 21-25, 27-33, 39-41, and 43-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bogatu et al. (USPN 6,614,878 B2) in view of Seki et al. (USPN 3,610,984).

5. With respect to claim 1, Bogatu et al. disclose an apparatus for use in a radiation procedure, comprising: a radiation filter (Fig. 3) having a first portion (34) and a second portion (36), the first and the second portions forming a layer for filtering radiation impinging thereon; wherein the first portion is made from a first X-ray filtering material, and the second portion is made from a second X-ray filtering material (column 6, lines 61+). Bogatu et al. disclose everything except for a disk having a first target material and a second target material in operative association with the filters. Seki et al. disclose a disk (Fig. 1, 5) having a first target material (11) and a second target material (12) in operative association with the electron beam generating means (8). Seki et al. disclose different embodiments of the disk having the two different target materials in Figures 3-7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use two different target materials in the apparatus of Bogatu et al., in operative association with the first and second filtering materials, to further enhance contrast imaging, which is what Bogatu et al. are concerned with.

With respect to claim 2, Bogatu et al. disclose a radiation source (Fig. 2, 12) for generating the radiation (14), and it is obvious that the first and second target materials would be part of the radiation source.

With respect to claim 3, Bogatu et al. disclose a gantry (Fig. 2, 28) to which the radiation source (12) is secured.

With respect to claim 6, Bogatu et al. do not disclose the radiation source comprises an anode that includes a rare earth element, a platinum group metal, or combination thereof. Seki et al. disclose a radiation source anode that includes a rare earth element, a platinum group metal, or combination thereof (column 3, lines 55+). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an anode that includes a rare earth element, a platinum group metal, or combination thereof in the Bogatu et al. apparatus, because these are capable of emitting X-rays. The choice of anode material is dependent on the application being done, as taught by Seki et al.

With respect to claims 7 and 8, Bogatu et al. do not disclose the radiation source comprises a voltage generator, and a switching element coupled to the voltage generator, the switching element configured to modulate the voltage generated by the voltage generator. Seki et al. disclose a radiation source comprises a voltage generator (Fig. 2), and a switching element (22) coupled to the voltage generator, the switching element configured to modulate the voltage generated by the voltage generator. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a voltage generator and a switching element coupled to the voltage

generator in the Bogatu et al. radiation source, to enable controlling the energy of the X-rays emitted, as taught by Seki et al.

With respect to claim 9, Bogatu et al. disclose an imager for generating image data in response to radiation that has been filtered by the layer (column 6, lines 44+).

With respect to claim 11, Bogatu et al. disclose a gantry (28), wherein the imager (24) and the radiation filter (30) are secured to the gantry.

With respect to claim 12, Bogatu et al. disclose the imager (24) is coupled to a support structure for supporting an object (26) to which filtered radiation (20a/b/c) is directed.

With respect to claims 43-45, Seki et al. disclose the first target material forms a ring configuration; the first target material and the second target material are positioned concentrically relative to each other (column 3, line 33); and the first target material and the second target material are positioned relative to each other in a side-by-side configuration (see Figs. 3-7).

With respect to claim 46, Bogatu et al. do not disclose an electron gun for sending electrons towards the first or the second target material. Seki et al. disclose this (Fig. 1, 8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an electron gun for sending electrons towards the first or the second target material in the Bogatu et al. apparatus, because this is a common means in the art for doing this, as taught by Seki et al.

With respect to claims 47-50, Seki et al. do not disclose an electron deflector for changing a path of the electrons; wherein the electron deflector comprises an

electromagnetic field generator; wherein the electron deflector comprises a magnetic field generator; wherein the electron deflector physically deflects the electrons. Seki et al. teach two separate electron beams generated by two different filaments to concentrate on the two focal points of differing target materials. However, Seki et al. teach that different configurations are possible for emitting the electron beams to the different target materials, and it is well known to those of skill in the art to do this via use of an electromagnetic field generator, magnetic field generator, or an electron deflector. These are all functionally equivalent means for deflecting electrons to the desired target location.

With respect to claim 51, Bogatu et al. disclose a gantry (28) to which the structure is secured.

With respect to claims 52 and 53, Bogatu et al. do not disclose the structure is part of a MRI or PET machine. However, Bogatu et al. disclose use in general to devices and methods for imaging the internal features of an object (column 1, lines 6-7), and it would have been obvious to one of ordinary skill in the art at the time the invention was made that this includes use in MRI or PET machines, which image the internal features of an object.

6. With respect to claim 21, Bogatu et al. disclose a method for generating image data, comprising: generating a first X-ray radiation using a first target material; applying a first filter factor (Fig. 3, 34) to the first X-ray radiation to obtain a first filtered radiation; generating a first set of image data in response to the first filtered radiation; generating a second X-ray radiation using a target material; applying a second filter factor (36) to

the second X-ray radiation to obtain a second filtered radiation; and generating a second set of image data in response to the second filtered radiation; wherein the first and the second filter factor is applied automatically using a machine (column 6, lines 22-60). Bogatu et al. disclose everything except for generating second x-ray radiation using *a second target material*. Seki et al. disclose this (column 1, line 68 – column 2, line 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use two different target materials in the apparatus of Bogatu et al., in operative association with the first and second filter factors, to further enhance contrast imaging, which is what Bogatu et al. are concerned with.

With respect to claims 22 and 23, Bogatu et al. disclose the first filter factor is applied by placing a first filter into the X-ray radiation, and the second filter factor is applied by placing a second filter into the X-ray radiation (column 6, lines 22-60).

With respect to claim 24, Bogatu et al. disclose the first filter factor has a same filtering characteristic as the second filter factor (both filter X-rays).

With respect to claim 25, Bogatu et al. disclose the first filter factor is different from the second filter factor (column 6, lines 61+).

With respect to claim 27, Bogatu et al. disclose the first filter factor and the second filter factor are applied by placing a first filter and a second filter, respectively, into the first and second X-ray radiation (column 6, lines 22-60).

With respect to claim 28, Bogatu et al. disclose the first filter (34) and the second filter (36) are secured to a rotatable structure (rotating wheel, 30).

7. With respect to claim 39, Bogatu et al. disclose an apparatus for use in a radiation procedure, comprising: a structure (Fig. 3, 30); a first radiation filter (34) secured to the structure; a second radiation filter (36) secured to the structure; and a positioner (Fig. 2, 42 & 40) coupled to the structure (30), the positioner configured to move the structure between a first position and a second position, wherein the first radiation filter is adapted to receive a first radiation generated using a first target material when the structure is in the first position, and the second radiation filter is adapted to receive the radiation generated using the target material when the structure is in the second position (column 6, lines 22-60). Botatu et al. disclose everything except for a first target material and a second target material in operative association with the filters. Seki et al. disclose a disk (Fig. 1, 5) having a first target material (11) and a second target material (12) in operative association with the electron beam generating means (8). Seki et al. disclose different embodiments of the disk having the two different target materials in Figures 3-7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use two different target materials in the apparatus of Bogatu et al., in operative association with the first and second filtering materials, to further enhance contrast imaging, which is what Bogatu et al. are concerned with.

With respect to claim 40, Bogatu et al. disclose the structure comprises a wheel (30).

With respect to claim 41, Bogatu et al. disclose the positioner comprises a motor (40).

8. With respect to claims 10 and 29-33, Bogatu et al. disclose the imager has a first image element for generating a first image data in response to radiation that has been filtered by the first portion of the radiation filter, and a second image element for generating a second image data in response to radiation that has been filtered by the second portion of the radiation filter (column 6, lines 22-60).

9. Claims 13, 34, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bogatu et al. (USPN 6,614,878 B2) in view of Seki et al. (USPN 3,610,984) as applied to claims 1, 21, 27, and 39 above, and further in view of Albagli (USPN 6,418,193 B1).

10. With respect to claims 13, 34, and 42, Bogatu et al. do not disclose either or both of the first and second X-ray filtering materials are selected from the group consisting of aluminum, copper, and molybdenum. Albagli discloses filters consisting of aluminum, copper, and molybdenum (column 1, lines 14-17). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have either or both of the first and second X-ray filtering materials of Bogatu et al. selected from the group consisting of aluminum, copper, and molybdenum, depending on the X-ray spectrum desired, as taught by Albagli. The choice of filter material depends on the application being done.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1-3, 7, 9-12, 21-25, 27-33, 39-41, 43, 45, 51, and 52 are rejected under 35 U.S.C. 102(e) as being anticipated by Hoffman (US 2004/0247082 A1).

13. With respect to claims 1, 21, and 39, Hoffman discloses a method and apparatus for use in a radiation procedure, comprising: a radiation filter (Fig. 6, 88) having a first portion (90) and a second portion (92), the first and the second portions forming a layer for filtering radiation impinging thereon; wherein the first portion is made from a first X-ray filtering material, and the second portion is made from a second X-ray filtering material (page 3, paragraph 0042); a structure having a cavity (Fig. 4, 32), the radiation filter in operative association with the structure; and a disk (106) located within the cavity, the disk having a first target material (102) and a second target material (104). Hoffman also discloses a structure with a first radiation filter (90) and a second radiation filter (92) secured to the structure, and a positioner (94) coupled to the structure, the positioner configured to move the structure between a first and second position.

With respect to claim 2, the first and the second target materials (102 & 104) are parts of a radiation source and the apparatus further comprises a radiation source.

With respect to claim 3, a gantry (Fig. 3, 34) is disclosed to which the radiation source (32) is secured.

With respect to claim 7, the radiation source comprises a voltage generator (52').

With respect to claim 9, an imager (Fig. 3, 40) for generating image data in response to radiation that has been filtered by the layer.

With respect to claims 10 and 29-33, the imager has a first image element for generating a first image data in response to radiation that has been filtered by the first portion of the radiation filter, and a second image element for generating a second image data in response to radiation that has been filtered by the second portion of the radiation filter (page 5, paragraphs 0058+).

With respect to claim 11, a gantry (34) is disclosed wherein the imager (40) and the radiation filter (part of X-ray source, 32) are secured to the gantry.

With respect to claim 12, the imager (40) is coupled to a support structure (42) for supporting an object (44) to which filtered radiation is directed.

With respect to claims 22 and 23, the first filter factor is applied by placing a first filter (90) into the X-ray radiation, and the second filter factor is applied by placing a second filter (92) into the X-ray radiation.

With respect to claim 24, the first filter factor has a same filtering characteristic as the second filter factor (both filter X-rays).

With respect to claim 25, the first filter factor is different from the second filter factor (page 3, paragraph 0042).

With respect to claim 27, the first filter factor and the second filter factor are applied by placing a first filter (90) and a second filter (92), respectively, into the first and second X-ray radiation (108).

With respect to claims 28 and 40, the first filter (90) and the second filter (92) are secured to a rotatable structure (rotating filter, 88).

With respect to claim 41, the positioner comprises a motor (part of filter rotating device, 94).

With respect to claim 43, the first target material (Fig. 6, 102) forms a ring configuration.

With respect to claim 45, the first target material (102) and the second target material (104) are positioned relative to each other in a side–by-side configuration.

With respect to claim 51, the structure is secured to a gantry (34).

With respect to claim 52, the structure is part of a MRI machine (page 2, paragraph 0025).

Response to Arguments

14. Applicant's arguments with respect to claims 1, 21, and 39 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jurie Yun whose telephone number is 571 272-2497. The examiner can normally be reached on Monday-Friday 8:30-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jurie Yun
February 22, 2006

EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER